

IBM wants you  
to know about  
BACHMAN/Designer  
for the CSP  
application  
generator.

Find out why!

# BACHMAN/Designer can help you multiply the benefits of CSP—with an order of magnitude improvement in application productivity.

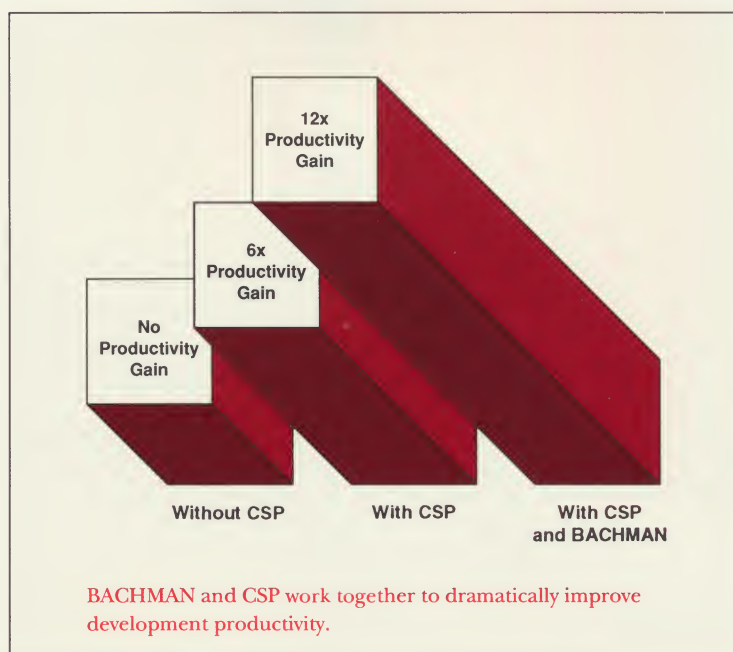
Every information systems professional knows the problems of application backlogs, maintenance, and the burden of constant change. Every developer is looking for ways to keep up.

That's exactly why the IBM Cross System Product (CSP) application generator has been gaining wide acceptance in recent years by IBM users. In fact, it's the most widely used application generator in the world. Typical users say it's 6 times faster to write an application in CSP than in a conventional language like COBOL. *6 times faster!*

Now, just imagine if you could take that productivity even further. What if there was a product that would automate the input into CSP for you... that would handle the logic and data definitions and I/O statements and other details that slow down application development... *that could more than double yet again your development productivity, to an order of magnitude improvement?*

Well, you don't have to imagine. There is such a product and it's called BACHMAN/Designer.™ It takes logical models of your business and database (created in BACHMAN/Analyst™ and BACHMAN/Database Administrator™) and generates the output you need for fast CSP application development.

Major IBM shops are using BACHMAN/Designer today to leverage their CSP investment and training, cut back on their application backlog, and improve the quality of their applications. This booklet will show you some of the reasons why these benefits are possible.



# "CSP is already productive. How can BACHMAN/Designer make such a difference?"

To begin with, BACHMAN/Designer is a unique tool, unlike anything else you will see in the marketplace. It adds capabilities that simply were never available to you before. So if the promise of so much productivity seems hard to believe, keep reading. It's true!

What is the secret? The short explanation is that BACHMAN/Designer reduces the manual coding required by CSP programming. It automatically handles the time-consuming details of programming that slow up applications and are prone to errors. It does the housekeeping for you.

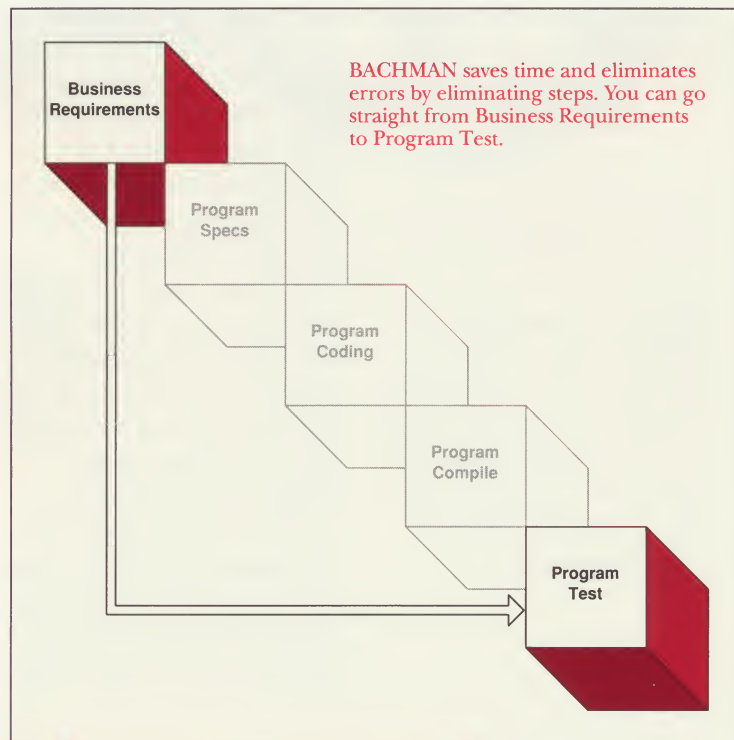
For example, BACHMAN/Designer generates application structures,

data definitions, fully executable SQL statements, and error handling structures. What's more, they're all syntactically and semantically correct, validated against the database design.

The result is that developers are free to focus on what really matters: how the application helps the business and solves the end user requirements.

## "But wait, there's more..."

To look at BACHMAN/Designer by itself is to see only a small part of the picture. Because the question still remains: How does BACHMAN do it? How can BACHMAN/Designer accomplish this advanced level of productivity? The answer is a powerful concept called model-driven development.





# BACHMAN model-driven complete answer to dev

*Model-driven development is an application development strategy that allows organizations to respond quickly to changing business conditions, independent of technology changes. Applications are created at the conceptual level, not the implementation level, using models that can be updated and reused over time.*

*BACHMAN offers a full model-driven development solution. Our unique two-level architecture, and the richness of our built-in AI tools for re-engineering, model enhancement and design optimization, bring you a new level of power—to reduce development time, respond rapidly to business changes, and manage the challenge of on-going application maintenance.*

The key to understanding BACHMAN/Designer—and to making the most of your CSP efforts—is model-driven development. You see, BACHMAN/Designer is more than a single product, it's part of a complete, powerful environment pioneered by BACHMAN.

There are three key products in the BACHMAN modeling environment. BACHMAN/Designer is one. The other two are BACHMAN/Analyst for high-level modeling, and BACHMAN/DBA™ for creating relational database designs. Other BACHMAN products provide links to databases and other CASE environments.

Taken together, they provide a solution that is tailor-made for the challenges you face. Model-driven development lets you eliminate many of the redundant steps that traditional CASE tools require. It streamlines development through true integration, and reduces the potential for human error.

And because models are complete specifications, synchronized with your database and application design, they're always accurate—you can reuse them as needs change to generate optimized database designs and CSP applications.

It's an end-to-end approach to development, from business model directly to production application. Using CSP this way, you enjoy an entirely new level of productivity.

And a new way to keep up with your business information needs.

## Putting it all together

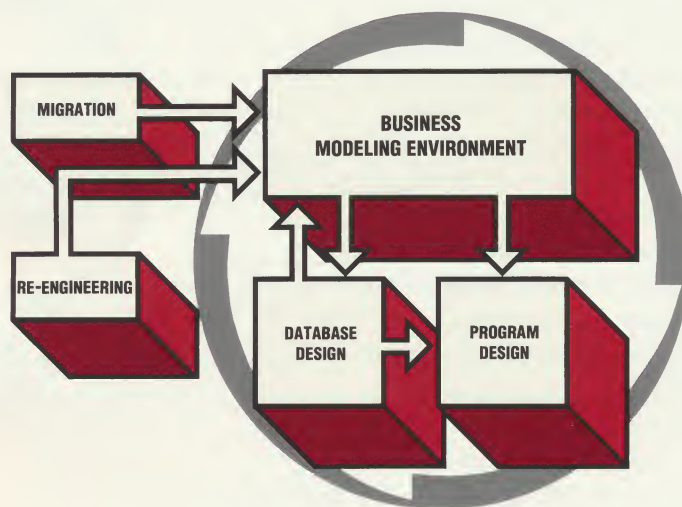
**BACHMAN/Analyst: Where “intelligent” models of your business are created and reused.** With the BACHMAN/Analyst, the user creates active models, not passive diagrams. Integrated with the physical level, they are logical, “intelligent” constructs that can be reused. There are three kinds of models: data models, which consist of entities and relationships for the columns and tables in DB2®; process models, which contain the detailed representations of processes and how they interact with the data model; and logic models, which hold the procedural business specifications that reference the data model.

**BACHMAN/DBA: Where database designs are optimized for DB2 performance.** BACHMAN/DBA lets you rapidly create, update and maintain high-performance, production quality DB2 databases that meet

# development is the first elopment productivity.

AD/Cycle™ requirements. It helps you allocate free space, identify wasted space, accurately order columns for multi-column indexes, identify potential foreign keys, denormalize, and a myriad of other database design tasks.

**BACHMAN/Designer:** Where platform-independent applications are generated. BACHMAN/Designer uses the models created in BACHMAN/Analyst, and designs from BACHMAN/DBA, to drive output in External Source Format (ESF), which CSP can use to create applications for any IBM platform.



*The BACHMAN Modeling Environment*

# The BACHMAN vision: Reusable applications that keep up with your business.

Since BACHMAN was founded in 1983 by Charlie Bachman, a leading creator of database and data communications theory, the company has had a clear vision: that in order to leverage your investment in applications—and to keep up with the demands of your business—you need a way to reuse your work.

The idea of reuse was first developed in BACHMAN's re-engineering products for database design and maintenance. Through re-engineering, BACHMAN tools allow customers to reuse old data structures from existing systems like IMS, IDMS or VSAM files, by migrating them into relational databases such as DB2.

Re-engineering has become a major requirement of IS professionals, allowing them to automate the development of new databases while keeping their past investments. BACHMAN can help you migrate older designs, create optimal information models at the

Entity Relationship level, and then design the best possible DB2 structures for those entities.

BACHMAN even automates the generation of syntactically correct SQL code and updates the relational catalog.

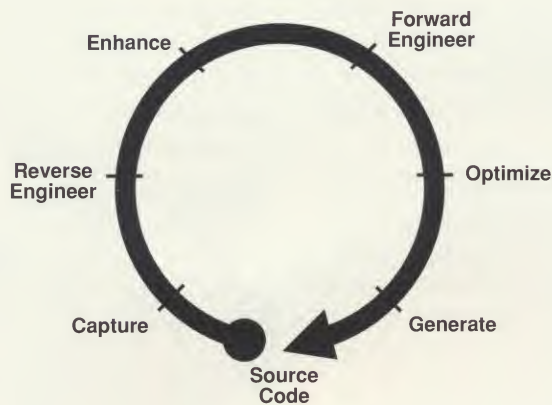
But that's only the beginning of the BACHMAN story.

## **A complete environment, from databases to applications**

Over the years, BACHMAN has extended its original vision to

encompass the complete development process. Now, with BACHMAN's full model-driven development set, it's not only old databases that are reusable, but all of your business models and application designs as well.

Reusability is one of the most important benefits of model-driven development. You can reuse the models in BACHMAN/Analyst and the database designs in BACHMAN/DBA, to create applications with the BACHMAN/Designer.



*The Re-engineering Cycle*



# "When the business changes..."

How powerful is the concept of model-driven development and reusability? Consider a typical scenario.

Your company has just acquired a major new division. While they use many of the same procedures as your existing operations, all the related applications will have to be revised. What do you do? You have to rebuild their databases into your environment. Modify both their applications and yours. All in the midst of tremendous business pressures.

Using conventional programming techniques, the process could easily take months or even years. But with model-driven development, it's a different story.

## Reusability in action

Here's how it works: first, you use BACHMAN re-engineering products to bring the new division's databases into models you can work with in BACHMAN/Analyst.

Next, you reuse the BACHMAN

models previously created for your organization, modifying them as needed to adapt to the new business requirements. This reuse is inherent in the model-driven approach of entity methods, external procedures, and derived attributes.

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*"What used to take days or weeks, can now be done in hours. With BACHMAN, we can react to change faster and more accurately."*

— A BACHMAN customer

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Finally, you use these models to generate new database code and applications.

BACHMAN/Analyst provides the entities and relationships that become the tables and columns in your DB2 and SQL/DS™ designs. BACHMAN/Analyst even records performance requirements for each process against the data. You can use this data to create a high-

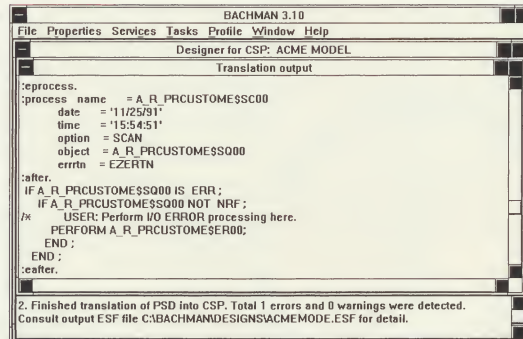
performance database design.

The BACHMAN/Designer carries these models into application design. It transforms business logic specifications into IBM's SAA® External Source Format (ESF) for use by CSP. Entity level data requests are translated into CSP process options that use the tables in your BACHMAN DB2 design. All this can be imported into CSP/AD, and used to generate CSP/AE applications or COBOL code.

The result: you move quickly from conceptual models to optimized production applications. And when your business changes again—which it will—you can reuse your models for a rapid head start. That's the power of model-driven development.

# A closer look at BACHMAN/Designer.

Figure 1



We've seen how BACHMAN helps the entire IS organization. Let's take a closer look at how BACHMAN/Designer gives new power to the developer working with CSP.

BACHMAN/Designer automatically generates application structures, data definitions, fully executable SQL statements, and error handling structures (Figure 1). All of these are syntactically and semantically correct, and validated against the model and database design.

BACHMAN/Designer will allow you to adapt to changes in the database design or in the application requirements. Changes can be made in either the BACHMAN/Analyst or the BACHMAN/DBA, and a new CSP application can be generated with the BACHMAN/Designer reflecting those changes.

For developers who prefer working in COBOL, BACHMAN/Designer generates all the SQL with the same advantages as those enjoyed

by the CSP developer.

In either case, by generating SQL, BACHMAN/Designer removes the need for the DBA to assist developers. The generated SQL is correct and specific to the design of the database. Developers are spared the detailed tasks of naming, definitions and I/O statements, and instead can focus on the business aspects of design.

In addition, because the logic specifications are carried forward from BACHMAN/Analyst, BACHMAN/Designer can automatically create documentation that indicates which statements generated which line of

code. This provides valuable historical information for maintaining and revising applications.

Finally, for those cases where IBM's Query Management Facility (QMF) is the appropriate application solution, BACHMAN/

Designer generates SQL for QMF queries, including prompting variables. These queries are generated without the analyst having to understand SQL or the complexities of the final DB2 implementation.

In conjunction with the multi-platform generation capabilities of CSP, applications for these platforms can be created by an analyst with some additional work in CSP.

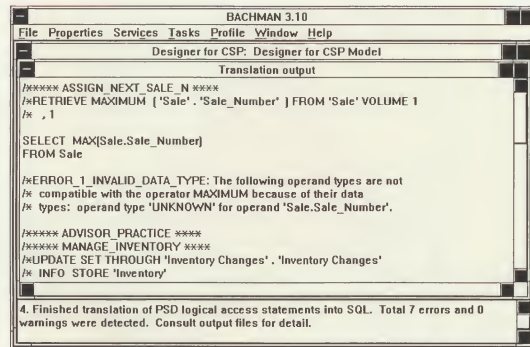
## A graphic advantage...

Since productivity depends on ease of use, BACHMAN has paid special attention to the user interface. BACHMAN/Designer has an easy-to-learn interface using menus and forms to speed development.



# Expert help from the industry's leading experts.

Figure 2



BACHMAN products are more than a modeling environment. They provide a unique way for BACHMAN to transfer industry-leading expertise to your organization.

How? By building our expertise into the products themselves using AI expert technology. We call this the BACHMAN Advisor (Figure 2).

BACHMAN has brought together many of the industry's top professionals. There's Charlie Bachman, founder, who helped create modern database theory and is a noted software engineer and data communications specialist. There's Chris Gane, who pioneered the single-plane view of modeling to allow methodology- and technology-inde-

pendent applications. And Chris Loosely, a principal consultant for BACHMAN, who spent 16 years at IBM as a database performance consultant and planner for both IMS and DB2.

## From BACHMAN to your desktop

Through the on-line BACHMAN Advisor feature, these experts are brought to your desktop to help you with all phases of re-engineering and modeling tasks. The Advisor points out problems in logic; advises on difficult decisions;

offers alternative ways of solving problems.

One of the most important roles of the expert systems based Advisor is to help you create the highest quality models possible—thus avoiding later problems. By identifying logical

problems and solving them early, your development process is accelerated, production code is completed sooner, and errors and defects are reduced.

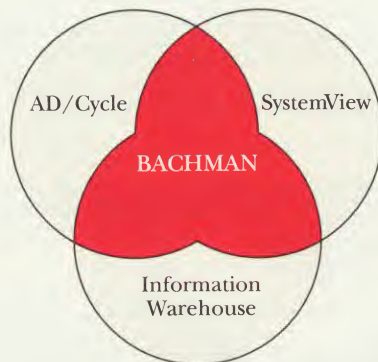
How much of this expertise you use, of course, is entirely up to you. The final decision is always yours. But the expert Advisor is always there, helping to transfer BACHMAN's knowledge into your organization to minimize learning and maximize productivity.

# The story doesn't end.

So far, you've read how the BACHMAN/Designer enhances your development capabilities and multiplies the power of CSP. And you've seen how model-driven development gives you the power to create applications at the conceptual level, responding rapidly to business changes.

But the real story is even larger: BACHMAN is a strategic investment for your whole company, not just a technical tool.

BACHMAN protects your investment by retaining your business definitions: the entities, relationships, tables, specifications, and



mappings between them. With BACHMAN, you have the ability to maintain a living model of your business that you can use to build new systems at a fraction of the cost, and communicate with every work group. In short, you have the ability to compete more effectively in the fast-paced world market.


## **A partnership that's just beginning**

BACHMAN is an official member of the IBM International Alliances

for AD/Cycle, SystemView™ and Information Warehouse.™

Working closely with IBM and other International Alliance partners, BACHMAN is bringing the benefits and power of model-driven development to all areas of information use and management, closely synchronized with IBM plans and products. And BACHMAN will be teaming up with other partners to provide early access to IBM advancements.

When you're ready to move ahead, BACHMAN will be there.



# BACHMAN and CSP: an unbeatable combination.

BACHMAN/Designer, combined with the rest of the BACHMAN modeling environment, can help you use CSP to achieve new levels of productivity.

BACHMAN/Designer is geared to work closely and reliably with CSP. And BACHMAN is committed to upgrading and enhancing its Designer product as CSP is upgraded and enhanced by IBM.

Now you understand why IBM wants you to know about BACHMAN/Designer. Because BACHMAN and IBM are an unbeatable combination.

## **Take the next step**

If you want to know how to apply the power of model-driven development to your company, send in one of the attached reply cards, or call:

In USA:  
1-800-222-4626

In Canada:  
1-800-445-0845

Outside North America:  
1-617-273-9003





*I want to multiply my productivity!*

- ☐ Send me a schedule of free seminars  
☐ Call me to set up a personal demonstration

Send more detailed information on BACHMAN products

- ☐ Designer ☐ Analyst ☐ DBA ☐ All

Operating system:

- ☐ MVS ☐ VSE ☐ VM ☐ Other \_\_\_\_\_

DBMS:

- ☐ DB2 ☐ SQL/DS ☐ IMS ☐ CA-IDMS  
☐ Other \_\_\_\_\_

Languages:

- ☐ COBOL ☐ PL/1 ☐ Other \_\_\_\_\_

Transaction Monitor:

- ☐ CICS ☐ IMS/DC ☐ Other \_\_\_\_\_

Current Generator:

- ☐ CSP ☐ Other \_\_\_\_\_

Cooperative Processing:

- ☐ Now ☐ Planning ☐ Interest \_\_\_\_\_

IBM mainframe models: \_\_\_\_\_

My IBM MR/SE is: \_\_\_\_\_

Name \_\_\_\_\_

Title \_\_\_\_\_

Company \_\_\_\_\_

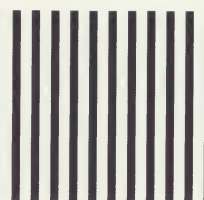
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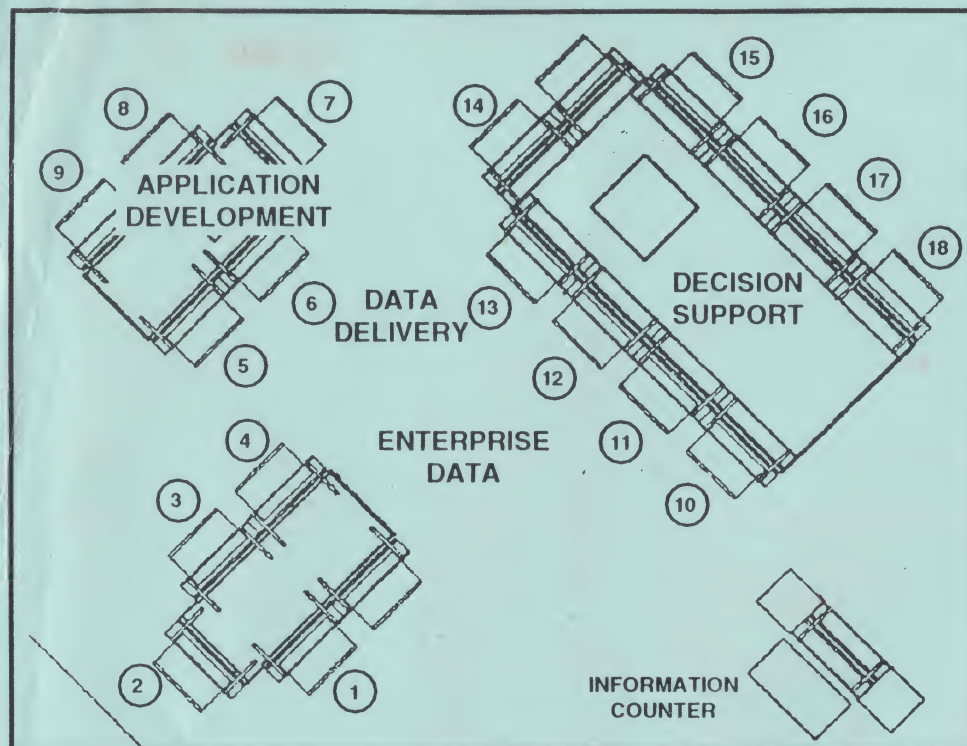
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GN28-0038-00







BOOTH #1004

MAIN ENTRANCE

| Demo # | Subject                | Related to: |    |    |    | Demo # | Subject                | Related to: |    |    |    |
|--------|------------------------|-------------|----|----|----|--------|------------------------|-------------|----|----|----|
|        |                        | ED          | DD | DS | AD |        |                        | ED          | DD | DS | AD |
| 1      | IW Multimedia Demo     | X           | X  | X  |    | 10     | Exec. Decisions, PAS/2 |             |    | X  |    |
| 2      | DB2, SQL/DS, SQL/400   | X           |    |    |    | 11     | OS/2 Database Manager  | X           |    | X  |    |
| 3      | SQL MASTER/VM          | X           |    |    |    | 12     | OS/2 DDCS/2            | X           | X  |    |    |
| 4      | Migration, Coexistence | X           | X  |    |    | 13     | DRDA With QMF          |             | X  | X  |    |
| 5      | Data Delivery Demos    |             | X  |    |    | 14     | AS, Lotus123M, ED/VM   |             |    | X  |    |
| 6      | EDA/SQL                |             | X  |    |    | 15     | SAA LanguageAccess     |             |    | X  |    |
| 7      | Data Interpr. System   |             |    | X  | X  | 16     | ED/MVS, NewsEdge, DJ   |             |    | X  |    |
| 8      | Micro Focus COBOL      |             |    |    | X  | 17     | EIS-TRACK              |             |    | X  |    |
| 9      | AD/CYCLE C. S. P.      |             |    |    | X  | 18     | PAS/2 Custom Appls.    |             |    | X  |    |

ED: Enterprise Data DD: Data Delivery DS: Decision Support AD: Application Development

At DB/EXPO 92, IBM is pleased to present **Information Warehouse — From Data to Information and Knowledge.**

IBM's **Information Warehouse Framework** is a strategic initiative for the 1990's and beyond that addresses the requirements for access to data — and information — wherever it is stored, from wherever the request comes, the way the user wants it. Our large Exhibit Area has eighteen demos and information booths showing products and concepts related to the main strategies behind the **Information Warehouse Framework: Enterprise Data (ED), Data Delivery (DD), and Decision Support (DS).** See the diagram on the left for a quick guide to what is shown. Hope to visit with YOU at Booth 1004, the IBM Exhibit Area!

**IBM**  
**Information Warehouse**  
of  
**DB/EXPO 92**

***See Us at Booth 1004 — Just Inside the Main Entrance!***

***Also See Our International Alliance Members:***

***Bachman: Booth 1602***

***Information Builders, Inc.: Booth 818***